Cisco Catalyst 3750 v2 Series Switches

Product Overview

The Cisco® Catalyst® 3750 v2 Series Switches (Figure 1) are next-generation energy-efficient Layer 3 Fast Ethernet stackable switches. This new series of switches supports Cisco® EnergyWise technology, which enables companies to measure and manage power consumption of network infrastructure and network-attached devices, thereby reducing their energy costs and their carbon footprints. The Cisco Catalyst 3750 v2 Series consumes less power than its predecessors and is the ideal access layer for enterprise, retail, and branch-office environments, as it increases productivity and investment protection by enabling a unified network for data, voice, and video.

Figure 1. Cisco Catalyst 3750 v2 Switches (Front and Back)

Catalyst 3750 v2 Series Highlights

- Lower power consumption than its predecessors
- Backward compatible with Cisco Catalyst 3750 and 3750-E Series Switches
- EnergyWise support to monitor energy consumption of network infrastructure and implement energy saving programs to reduce energy costs
- Open Shortest path First (OSPF) routing with IP Base feature set
- Compatible with Cisco Redundant Power System (RPS) 2300
- Uniform depth of 11.9 inches on all units for better cable management
- IPv6 routing included in the IP Services feature set

Configurations

The Cisco Catalyst 3750 v2 Series consists of the switches listed in Table 1 (also refer to Figure 1).

Table 1. Switch Configurations

Model	Description
3750V2-24TS	24 Ethernet 10/100 ports and 2 Small Form-Factor Pluggable (SFP) Gigabit Ethernet ports; 1 rack unit (RU)
3750V2-48TS	48 Ethernet 10/100 ports and 4 SFP Gigabit Ethernet ports; 1RU
3750V2-24PS	24 Ethernet 10/100 ports with Power over Ethernet (PoE) and 2 SFP Gigabit Ethernet ports; 1 RU
3750V2-48PS	48 Ethernet 10/100 ports with PoE and 4 SFP Gigabit Ethernet ports; 1RU
3750V2-24FS	24 Ethernet 100FX SFP ports and 2 SFP Gigabit Ethernet ports; 1 RU; Transceivers are optional and not included with the base switch

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Cisco StackWise Technology for Stackable Resiliency

Cisco StackWise® technology is a stacking architecture optimized for Gigabit Ethernet. This technology is designed to respond to additions, deletions, and redeployment while maintaining constant performance. Cisco StackWise technology unites up to nine individual switches in a single logical unit, using special stack-interconnect cables and stacking software. The individual switches can be any combination of Cisco Catalyst 3750, 3750 v2, and 3750-E Series Switches. The stack behaves as a single switching unit that is managed by a master switch, chosen from one of the member switches. The master switch automatically creates and updates all the switching and optional routing tables. A working stack can accept new members or delete old ones without service interruption.

Cisco StackWise stacking creates a 32-Gbps switch interconnection. Stacking does not require user ports. Up to 9 units can be stacked together for a maximum of 468 10/100 ports. Additional port combinations can be created by stacking together the Cisco Catalyst 3750 v2, 3750, and 3750-E Series Switches.

Cisco Catalyst 3750 v2 Series Software

The Cisco Catalyst 3750 v2 Series can be purchased with the IP Base or IP Services license preinstalled. The IP Base license offers advanced quality of service (QoS), rate limiting, access control lists (ACLs), and basic static and Routing Information Protocol (RIP) and OSPF routing functions. The IP Services license provides a richer set of enterprise-class features, including advanced hardware-based IP unicast and IP multicast routing as well as policy-based routing (PBR). The Advanced IP Services license, which includes IPv6 routing and IPv6 ACL support, is now included in the IP Services license. Upgrade licenses are available to upgrade a switch from the IP Base license to the IP Services license.

Configurable Cisco IOS Software

The Cisco Catalyst 3750 v2 Series can be preconfigured with a specific Cisco IOS Software release at the time of ordering. This option eliminates the need to reload a specific Cisco IOS Software release during deployment, thereby reducing deployment time and cost. The Cisco IOS Software release to be preloaded can be selected from a list of supported Cisco IOS Software releases, including the crypto version.

Cisco EnergyWise

The Cisco Catalyst 3750 v2 Series supports Cisco EnergyWise, which is a technology that enables monitoring, reporting, and management of energy consumption by end devices that are EnergyWise enabled. This technology enables companies to reduce their energy costs and carbon footprints. EnergyWise features enable you to:

- Discover all Cisco EnergyWise enabled devices on the network
- Monitor and report power consumption by these devices
- Implement business rules to control power to these end devices

More information about Cisco EnergyWise can be found at http://www.cisco.com/go/energywise.

Power over Ethernet

The Cisco Catalyst 3750 v2 Series can provide a lower total cost of ownership (TCO) for deployments that incorporate Cisco IP Phones, Cisco Aironet® wireless LAN (WLAN) access points, or any IEEE 802.3af-compliant end device. PoE eliminates the need for wall power outlets for each PoE-enabled device and significantly reduces the cost for additional electrical cabling that would otherwise be necessary in IP phone and WLAN deployments. The Cisco Catalyst 3750 v2 24-port PoE switch can support Class 3 PoE or 15.4 watts (W) of PoE power on all 24 ports. Taking advantage of Cisco Catalyst Intelligent Power Management, the Cisco Catalyst 3750 v2 48-port PoE configurations can deliver the necessary power to support 24 ports at 15.4W, 48 ports at 7.7W, or any combination in between. Maximum power availability for a converged voice and data network is attainable when a Cisco Catalyst

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3750 v2 Series Switch is combined with the Cisco RPS 2300 for protection against internal power supply failures and an uninterruptible power supply (UPS) system to safeguard against power outages.

Redundant Power System

The Cisco Catalyst 3750 v2 Series access switches support the new generation of Cisco RPS 2300, which increases availability in a converged data, voice, and video network by providing transparent power backup to two of six attached Cisco Catalyst 3750 v2 Series Switches at the same time. The Cisco Catalyst 3750 v2 Series Switches are capable of reverting to their internal power supply without any service interruption. In addition, the Cisco RPS 2300 can be managed by a Cisco Catalyst 3750 v2 Series Switch that is connected to it.

Primary Features and Benefits

Ease of Use and Deployment

The Cisco Catalyst 3750 v2 Series offers several ease-of-use features, which enable fast and easy configuration of advanced Cisco Catalyst capabilities. These features include:

- Cisco SmartPorts simplify the configuration of advanced Cisco Catalyst capabilities, encapsulating years of Cisco networking expertise. Cisco SmartPort macros offer a set of verified, pretested, recommended switch port configurations or templates per connection type that are easy to apply, enabling users to consistently and reliably configure essential security, IP telephony, availability, QoS, and manageability features with little effort and expertise.
- Cisco Auto-SmartPorts automatically execute SmartPort macros based on the end-device type, such as IP phones, desktop computers, and WLAN access points.
- Cisco Express Setup simplifies initial configuration with a web browser, eliminating the need for more complex terminal emulation programs and command-line interface (CLI) knowledge.
- IEEE 802.3af and Cisco prestandard PoE support comes with automatic discovery to detect a Cisco prestandard or IEEE 802.3af endpoint and provide the necessary power without any user configuration.
- Dynamic Host Configuration Protocol (DHCP) autoconfiguration of multiple switches through a boot server eases switch deployment.
- DHCP AutoInstall simplifies the deployment of a large number of switches by automatically downloading a specified Cisco IOS Software image and a configuration file from a Trivial File Transfer Protocol (TFTP) server. This feature can be used to implement an automated, or zero-touch, deployment.
- DHCP Port-Based Allocation allows you to allocate the same IP address for a specified port. The feature allows persistent allocation of IP addresses to specified network devices.
- Cisco IOS Embedded Event Manager (EEM) is a powerful and flexible tool for management and automation. This feature can be used to monitor network events and program automatic actions based on these network events. Policies can be defined through the CLI or through Tool Command Language (TCL) scripts and can be used in a variety of scenarios, such as automatic backup of a configuration file at a specified time or the triggering of an alert when traffic congestion crosses a specified threshold. Cisco IOS EEM requires the IP Services license.
- Configuration Replace and Rollback simplifies configuration management by allowing you to roll back configuration changes. This feature allows you to replace a configuration file with a saved configuration file without a switch reload; up to 14 configuration files can be saved.
- Automatic QoS (Auto-QoS) simplifies QoS configuration in voice-over-IP (VoIP) networks by sending interface and global switch commands to detect Cisco IP Phones, classify traffic, and enable egress queue configuration.

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- Autosensing on each 10/100 port detects the speed of the attached device and automatically configures the port for 10- or 100-Mbps operation, easing switch deployment in mixed 10- and 100-Mbps environments.
- Autonegotiation on all ports automatically selects half- or full-duplex transmission mode to optimize bandwidth.
- Dynamic Trunking Protocol (DTP) helps enable dynamic trunk configuration across all switch ports.
- Port Aggregation Protocol (PAgP) automates the creation of Cisco Fast EtherChannel groups or Gigabit EtherChannel groups to link to another switch, router, or server.
- Link Aggregation Control Protocol (LACP) allows the creation of Ethernet channeling with devices that conform to IEEE 802.3ad. This feature is similar to Cisco EtherChannel technology and PAgP.
- DHCP Server enables a convenient deployment option for the assignment of IP addresses in networks that do not have a dedicated DHCP server.
- DHCP Relay allows a DHCP relay agent to broadcast DHCP requests to the network DHCP server.
- IEEE 802.3z-compliant 1000BASE-SX, 1000BASE-LX/LH, 1000BASE-ZX, 1000BASE-T, and coarse wavelength-division multiplexing (CWDM) physical interface support through a field-replaceable SFP module provides exceptional flexibility in switch deployment.
- The default configuration stored in flash memory helps ensure that the switch can be quickly connected to the network and can pass traffic with little user intervention.
- Automatic medium-dependent interface crossover (Auto-MDIX) automatically adjusts transmit and receive pairs if an incorrect cable type (crossover or straight through) is installed on a 10/100 port.
- Time Domain Reflectometry (TDR) helps diagnose and resolve cabling problems on copper Ethernet ports.

Enhanced Security

With the wide range of security features, such as ACLs, authentication, port-level security, and identity-based network services (IBNS) with IEEE 802.1x and extensions that the Cisco Catalyst 3750 v2 Series offers, businesses can protect important information, keep unauthorized people off the network, guard privacy, and maintain uninterrupted operation. These security features include the following:

- IEEE 802.1x allows dynamic, port-based security, providing user authentication.
- IEEE 802.1x with VLAN assignment allows a dynamic VLAN assignment for a specific user regardless of where the user is connected.
- IEEE 802.1x with voice VLAN permits an IP phone to access the voice VLAN regardless of the authorized or unauthorized state of the port.
- IEEE 802.1x and port security are provided to authenticate the port and manage network access for all MAC addresses, including those of the client.
- IEEE 802.1x with an ACL assignment allows specific identity-based security policies regardless of where the user is connected.
- IEEE 802.1x with guest VLAN allows guests without IEEE 802.1x clients to have limited network access on the guest VLAN.
- IEEE 802.1x supplicant on the switches can be used to authenticate switches on the network, thereby preventing unauthorized network devices from being used to expand the network.
- IEEE 802.1x readiness check eases IEEE 802.1x deployment in an enterprise. This feature determines whether the client has an IEEE 802.1x supplicant by initiating an IEEE 802.1x ping.
- Open IEEE 802.1x allows network communication to take place before IEEE 802.1x authentication. This feature is useful for preexecution environments (PXEs) and other applications in which network connectivity is required prior to IEEE 802.1x authentication. An ACL is used to allow traffic prior to authentication.

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- Flexible authentication (FlexAuth) can be used to determine the order of authentication methods on the network. For example, if the order is set to IEEE 802.1x, MAC authentication bypass (MAB), and WebAuth, the network will first try to authenticate through IEEE 802.1x, then MAB, and then WebAuth.
- Multi-authentication (MultiAuth) enables up to eight users to authenticate through the same switch port. This feature includes support for multiple authentication methods, such as IEEE 802.1x, MAB, and WebAuth, and per-user ACLs.
- Web authentication for non-IEEE 802.1x clients allows non-IEEE 802.1x clients to use an SSL-based browser for authentication.
- Local web authentication allows non-IEEE 802.1x users to authenticate through a login webpage. The user enters the authentication information, such as a user ID and password, and is authenticated through an authentication, authorization, and accounting (AAA) server.
- The local web authentication banner allows users to customize the authentication webpage.
- Multidomain authentication allows an IP phone and a PC to authenticate on the same switch port while placing them on appropriate voice and data VLANs.
- MAB for voice allows third-party IP phones without an IEEE 802.1x supplicant to be authenticated using the MAC address.
- Cisco security VLAN ACLs (VACLs) on all VLANs prevent unauthorized data flows from being bridged within VLANs.
- Cisco standard and extended IP security router ACLs (RACLs) define security policies on routed interfaces for control- and data-plane traffic.
- Port-based ACLs (PACLs) for Layer 2 interfaces allow application of security policies on individual switch ports.
- Unicast MAC filtering prevents the forwarding of any type of packet with a matching MAC address.
- Unknown unicast and multicast port blocking allows tight control by filtering packets that the switch has not already learned how to forward.
- Secure Shell Version 2 (SSHv2), Kerberos, and Simple Network Management Protocol Version 3 (SNMPv3) provide network security by encrypting administrator traffic during Telnet and SNMP sessions. SSHv2, Kerberos, and the cryptographic version of SNMPv3 require a special cryptographic software image because of U.S. export restrictions.
- The Private VLAN Edge feature provides security and isolation between switch ports, helping ensure that users cannot snoop on other users' traffic.
- Private VLANs restrict traffic between hosts in a common segment by segregating traffic at Layer 2, turning a broadcast segment into a nonbroadcast multi-access-like segment.
- Bidirectional data support on the Switched Port Analyzer (SPAN) port allows the Cisco Secure Intrusion Detection System (IDS) to take action when an intruder is detected.
- TACACS+ and RADIUS authentication enable centralized control of the switch and restrict unauthorized users from altering the configuration.
- MAC address notification allows administrators to be notified of users added to or removed from the network.
- Dynamic Address Resolution Protocol (ARP) Inspection (DAI) helps ensure user integrity by preventing malicious users from exploiting the insecure nature of ARP.
- DHCP snooping allows administrators to help ensure consistent mapping of IP to MAC addresses. This feature can be used to prevent attacks that attempt to harm the DHCP binding database, and to rate limit the amount of DHCP traffic that enters a switch port.

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- IP source guard prevents a malicious user from spoofing or taking over another user's IP address by creating a binding table between the client's IP and MAC addresses, port, and VLAN.
- DHCP Interface Tracker (Option 82) augments a host IP address request with the switch port ID.
- Port security secures the access to an access or trunk port based on the MAC address.
- After a specific time period, the aging feature removes the MAC address from the switch to allow another device to connect to the same port.
- The Trusted Boundary feature provides the capability to trust the QoS priority settings if an IP phone is present and to disable the trust settings if the IP phone is removed, thereby preventing a malicious user from overriding prioritization policies in the network.
- Multilevel security on console access prevents unauthorized users from altering the switch configuration.
- The user-selectable address-learning mode simplifies configuration and enhances security.
- Bridge protocol data unit (BPDU) guard shuts down Spanning Tree Protocol PortFast-enabled interfaces when BPDUs are received to avoid accidental topology loops.
- Spanning-Tree Root Guard (STRG) prevents edge devices not in the network administrator’s control from becoming Spanning Tree Protocol root nodes.
- Internet Group Management Protocol (IGMP) filtering provides multicast authentication by filtering out nonsubscribers and limits the number of concurrent multicast streams available per port.
- Dynamic VLAN assignment is supported through implementation of VLAN Membership Policy Server (VMPS) client functions to provide flexibility in assigning ports to VLANs. Dynamic VLAN helps enable fast assignment of IP addresses.
- Cisco Network Assistant software security wizards ease the deployment of security features for restricting user access to a server as well as to a portion of or the entire network.
- Two thousand access control entries are supported.

Availability and Scalability

The Cisco Catalyst 3750 v2 Series is equipped with a robust set of features that allow network scalability and higher availability through IP routing as well as a complete suite of Spanning Tree Protocol enhancements that help increase availability in a Layer 2 network.

Enhancements to the standard Spanning Tree Protocol, such as Per-VLAN Spanning Tree Plus (PVST+), Uplink Fast, and PortFast, increase network uptime. PVST+ allows Layer 2 load sharing on redundant links to efficiently use the additional capacity inherent in a redundant design. Uplink Fast, PortFast, and BackboneFast all greatly reduce the standard 30- to 60-second Spanning Tree Protocol convergence time. Loop guard and BPDU guard provide Spanning Tree Protocol loop avoidance. Superior redundancy features include the following:

- Cisco Uplink Fast and BackboneFast technologies help ensure quick failover recovery, enhancing overall network stability and reliability.
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) provides rapid spanning-tree convergence independent of spanning-tree timers and the benefit of distributed processing.
- PVRST+ allows rapid spanning-tree reconvergence on a per-VLAN spanning-tree basis, without requiring implementation of spanning-tree instances.
- Cisco Hot Standby Router Protocol (HSRP) is supported to create redundant, fail-safe routing topologies.
- FlexLink enables fast failover for redundant links in a Layer 2 network. FlexLink offers a faster convergence than Spanning Tree Protocol and eliminates the need for Spanning Tree Protocol.

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- FlexLink load balancing allows both the primary and the backup links to carry traffic for different sets of VLANs. If an interface fails, the peer interface will carry all the traffic for all VLANs.
- Command-switch redundancy enabled in Cisco Network Assistant software allows designation of a backup command switch that takes over cluster-management functions if the primary command switch fails.
- Unidirectional Link Detection Protocol (UDLD) and Aggressive UDLD allow unidirectional links to be detected and disabled to avoid problems such as spanning-tree loops.
- Switch port autorecovery (errdisable) automatically attempts to reenable a link that is disabled because of a network error.
- Cisco RPS 2300 support provides superior internal power-source redundancy, resulting in improved fault tolerance and network uptime.
- Equal-cost routing (ECR) provides load balancing and redundancy.
- Bandwidth aggregation of up to 8 Gbps through Cisco Gigabit EtherChannel technology and up to 800 Mbps through Cisco Fast EtherChannel technology enhances fault tolerance and offers higher-speed aggregated bandwidth between switches and to routers and individual servers.

High-Performance IP Routing

Cisco Catalyst 3750 v2 Series Switches deliver high-performance, hardware-based IP routing. The Cisco Express Forwarding CEF/dCEF) routing architecture enables outstanding scalability and performance.

Implementation of routed uplinks to the core improves network availability by enabling faster failover protection and simplifying the Spanning Tree Protocol algorithm by terminating all Spanning Tree Protocol instances at the aggregator switch. If one of the uplinks fails, quicker failover to the redundant uplink can be achieved with a scalable routing protocol such as Open Shortest Path First (OSPF) or Enhanced Interior Gateway Routing Protocol (EIGRP) rather than relying on standard Spanning Tree Protocol convergence. Redirection of a packet after a link failure using a routing protocol results in faster failover than a solution that uses Layer 2 spanning-tree enhancements. Additionally, routed uplinks allow better bandwidth use by implementing ECR on the uplinks to perform load balancing. Routed uplinks optimize the utility of uplinks out of the LAN by eliminating unnecessary broadcast data flows into the network backbone.

Other high-performance routing features include the following:

- Cisco Express Forwarding hardware routing architecture delivers extremely high-performance IP routing.
- Basic IP unicast routing protocols (static, RIPv1, RIPv2, EIGRP-Stub and OSPF) are supported for small-network routing applications.
- Advanced IP unicast routing protocols (OSPF, Interior Gateway Routing Protocol [IGRP], EIGRP, and Border Gateway Protocol Version 4 [BGPv4]) are supported for load balancing and construction of scalable LANs. The IP Services license is required.
- IPv6 unicast routing capability (static, RIP, OSPF, and EIGRP) forwards IPv6 traffic through configured interfaces (the IP Services license is required).
- PBR allows superior control by enabling flow redirection regardless of the routing protocol configured. The IP Services license is required.
- Inter-VLAN IP routing provides full Layer 3 routing between two or more VLANs.
- Protocol Independent Multicast (PIM) for IP multicast routing is supported, including PIM sparse mode (PIM-SM), PIM dense mode (PIM-DM), and PIM sparse-dense mode. The IP Services license is required.
- Distance Vector Multicast Routing Protocol (DVMRP) tunneling interconnects two multicast-enabled networks across nonmulticast networks. The IP Services license is required.
- Fallback bridging forwards non-IP traffic between two or more VLANs. The IP Services license is required.

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Integrated Cisco IOS Software Features for Bandwidth Optimization

The Cisco Catalyst 3750 v2 Series offers several advanced features for bandwidth optimization:

- Per-port broadcast, multicast, and unicast storm control prevents faulty end stations from degrading overall system performance.
- IEEE 802.1d Spanning Tree Protocol support for redundant backbone connections and loop-free networks simplifies network configuration and improves fault tolerance.
- PVST+ allows for Layer 2 load sharing on redundant links to efficiently use the additional capacity inherent in a redundant design.
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) allows a spanning-tree instance per VLAN, enabling Layer 2 load sharing on redundant links.
- ECR provides load balancing and redundancy.
- Virtual Route Forwarding (VRF) Lite enables a service provider to support two or more VPNs with overlapping IP addresses.
- VRF-aware IP services enable the use of functions such as TFTP, FTP, syslog, SNMP, traceroute, ping, HSRP, ARP, and IP service-level agreements (SLAs) within a VRF instance.
- Local Proxy ARP works in conjunction with Private VLAN Edge to reduce broadcasts and increase available bandwidth.
- VLAN1 reduction allows VLAN1 to be disabled on any individual VLAN trunk link.
- VLAN Trunking Protocol (VTP) pruning limits bandwidth consumption on VTP trunks by flooding broadcast traffic only on trunk links required to reach the destination devices.
- IGMPv3 snooping for IPv4 and IPv6 Multicast Listener Discovery Versions 1 and 2 (MLDv1 and v2) snooping provide fast client joins and leaves of multicast streams and limit bandwidth-intensive video traffic to only the requestors.
- IGMP filtering provides multicast authentication by filtering out nonsubscribers and limits the number of concurrent multicast streams available per port.
- Multicast VLAN registration (MVR) continuously sends multicast streams in a multicast VLAN while isolating the streams from subscriber VLANs for bandwidth and security reasons.
- Source-Specific Multicast (SSM) simplifies multicast deployment and optimizes bandwidth for one-to-many applications, such as a corporate video broadcast.
- Multicast VRF-Lite enables multicast virtualization and separation of VRF traffic.
- EIGRP stub and PIM stub enable multicast and routing on the uplinks, within the IP Base feature set.
- IGMP Proxy enables the switch to process IGMP client requests, within the IP Base feature set.
- Cisco IP SLAs allow you to optimize IP business applications, including VoIP, video, and data, by measuring end-to-end service levels and performance. This feature can be used to monitor performance and to prove service levels. The IP SLA requestor function requires the IP Services license, but the IP SLA responder function is available within the IP Base license.
- The Cisco MAC Notification MIB enables you to monitor MAC table use and to track end-device movement across the network. This feature also allows you to set threshold limits for notification of MAC changes.

Advanced QoS

The Cisco Catalyst 3750 v2 Series offers superior multilayer, granular QoS features to help ensure that network traffic is classified and prioritized, and that congestion is avoided in the best possible manner. Configuration of QoS is greatly simplified through Auto-QoS, a feature that detects Cisco IP Phones and automatically configures the switch for the appropriate classification and egress queuing. Other QoS features include the following:

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- Cross-stack QoS allows QoS to be configured across the entire stack.
- Standard IEEE 802.1p class-of-service (CoS) and differentiated services code point (DSCP) field classification are provided, using marking and reclassification on a per-packet basis by source and destination IP address, source and destination MAC address, or Layer 4 TCP or User Datagram Protocol (UDP) port number.
- Cisco control- and data-plane QoS ACLs on all ports help ensure proper marking on a per-packet basis.
- Four egress queues per port enable differentiated management of up to four traffic types.
- Shaped Round Robin (SRR) scheduling helps ensure differential prioritization of packet flows by intelligently servicing the ingress and egress queues.
- Weighted Tail Drop (WTD) provides congestion avoidance at the ingress and egress queues before a disruption occurs.
- Strict priority queuing helps ensure that the highest-priority packets are serviced ahead of all other traffic.
- There is no performance penalty for highly granular QoS functions.
- IP SLAs allow you to optimize IP business applications for VoIP, video, and data by measuring end-to-end service-level and performance metrics.
- The Cisco Committed Information Rate (CIR) function helps ensure bandwidth in increments as low as 8 Kbps.
- Rate limiting is provided based on source and destination IP address, source and destination MAC address, Layer 4 TCP and UDP information, or any combination of these fields, using QoS ACLs (IP ACLs or MAC ACLs), class maps, and policy maps.
- Asynchronous data flows upstream and downstream from the end station or on the uplink are easily managed using ingress policing and egress shaping.
- Up to 64 aggregate or individual policers are available per Fast Ethernet or Gigabit Ethernet port.

Intelligent PoE Management

The Cisco Catalyst 3750 v2 Series PoE models support Cisco IP Phones and Cisco Aironet WLAN access points as well as any IEEE 802.3af-compliant end device. These are some of the advanced PoE features available:

- Cisco Discovery Protocol Version 2 allows the Cisco Catalyst 3750 v2 Series Switch to negotiate a more granular power setting when connecting to a Cisco powered device, such as an IP phone or access point, than what is provided by IEEE classification.
- The Per-port power consumption command allows customer to specify the maximum power setting on an individual port.
- Per-port PoE power sensing measures the actual power being drawn, enabling more intelligent control of powered devices.
- The PoE MIB provides proactive visibility into power use and enables power policing and troubleshooting.
- Link Layer Discovery Protocol (LLDP) and LLDP for Media Endpoint Devices (LLDP-MED) add support for the IEEE 802.1AB LLDP for interoperability in multivendor networks. Switches exchange speed, duplex, and power settings with end devices such as IP phones.

Management and Control Functions

A working stack is self-managing and self-configuring. When switches are added or removed, the master switch automatically loads the Cisco IOS Software revision running on the stack to the new switch, loads the global configuration parameters, and updates all the routing tables to reflect changes. Upgrades are applied universally and simultaneously to all members of the stack.

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The Cisco Catalyst 3750 v2 Series stacks up to nine switches as a single logical unit, for a total of 468 Ethernet or PoE 10/100 ports. Additional port combinations can be created by connecting the Cisco Catalyst 3750 and 3750-E Series Switches to the stack. Individual 10/100, 10/100/1000, and 10 Gigabit Ethernet units can be joined in any combination to evolve with network needs.

In addition, the Cisco Catalyst 3750 v2 Series Switches come with an extensive set of management and control features:

- Cisco IOS Software CLI support provides a common user interface and command set with all Cisco routers and Cisco Catalyst desktop switches.
- Cisco Discovery Protocol Version 2 allows the Cisco Catalyst 3750 v2 Series Switch to negotiate a more granular power setting when connecting to a Cisco powered device, such as an IP phone or access point, than what is provided by IEEE classification.
- The PoE MIB provides proactive visibility into power use and allows customers to set different power-level thresholds.
- Switching Database Manager templates for access, routing, and VLAN deployment scenarios allow the administrator to easily increase the memory allocation to the desired features based on deployment-specific requirements.
- Cisco Generic On-Line Diagnostics (GOLD) checks the health of hardware components and verifies proper operation of the system data and control planes at run time and boot time.
- VLAN trunks can be created from any port, using either standards-based IEEE 802.1Q tagging or the Cisco Inter-Switch Link (ISL) VLAN architecture.
- Voice VLAN simplifies telephony installations by keeping voice traffic on a separate VLAN for easier administration and troubleshooting.
- Cisco VTP supports dynamic VLANs and dynamic trunk configuration across all switches.
- Cisco Group Management Protocol server functions help enable a switch to serve as the Cisco Group Management Protocol router for client switches. The IP Services license is required.
- IGMPv3 snooping provides fast client joins and leaves of multicast streams and limits bandwidth-intensive video traffic to only the requestors.
- Remote SPAN (RSPAN) allows administrators to remotely monitor ports in a Layer 2 switch network from any other switch in the same network.
- For enhanced traffic management, monitoring, and analysis, the Embedded Remote Monitoring (RMON) software agent supports four RMON groups (history, statistics, alarms, and events).
- Layer 2 traceroute eases troubleshooting by identifying the physical path that a packet takes from source to destination.
- All nine RMON groups are supported through a SPAN port, which permits traffic monitoring of a single port or a group of ports from a single network analyzer or RMON probe.
- Domain Name System (DNS) provides IP address resolution with user-defined device names.
- TFTP reduces the cost of administering software upgrades by downloading from a centralized location.
- Network Timing Protocol (NTP) provides an accurate and consistent timestamp to all intranet switches.
- Multifunction LEDs per port for port status; half-duplex and full-duplex mode; and 10BASE-T, 100BASE-TX, and 1000BASE-T indication as well as switch-level status LEDs for system, redundant power supply, and bandwidth use provide a comprehensive and convenient visual management system.
- LLDP location support enables location-based services, such as end-device location, emergency responder, location-based QoS, location-based VLAN assignment, and location-based power management.

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Cisco Network Assistant

Cisco Network Assistant is a PC-based network-management application with a user-friendly GUI. Available at no cost, Cisco Network Assistant can be downloaded from Cisco.com.

- Cisco Network Assistant is a free, Windows-based application that simplifies the administration of networks of up to 250 users. It supports a wide range of Cisco Catalyst intelligent switches, from Cisco Catalyst 2960 Series Switches through the Cisco Catalyst 4506 Switch. With Cisco Network Assistant, users can manage Cisco Catalyst switches plus launch the device managers of Cisco integrated services routers and Cisco Aironet WLAN access points.
- The easy-to-use GUI provides both a topology map and front-panel view of the switch.
- Cisco Architecture for Voice, Video and Integrated Data (AVVID) wizards need just a few user inputs to automatically configure the switch to optimally handle different types of traffic: voice, video, multicast, and high-priority data.
- A security wizard is provided to restrict unauthorized access to applications, servers, and networks.
- Upgrading the Cisco IOS Software on Cisco Catalyst switches is a simple matter of pointing and clicking, with one-click upgrades.
- Cisco Network Assistant supports multilayer feature configurations such as routing protocols, ACLs, and QoS parameters.
- Multidevice and multiport configuration capabilities allow administrators to save time by configuring features across multiple switches and ports simultaneously.
- The user-personalized interface allows modification of polling intervals, table views, and other settings.
- Alarm notification provides automated email notification of network errors and alarm thresholds.

CiscoWorks LAN Management Solution

CiscoWorks LAN Management Solution (LMS) is a suite of powerful network management tools that simplify the configuration, administration, monitoring, and troubleshooting of Cisco networks. It integrates these capabilities into a world-class solution for improving the accuracy and efficiency of your operations staff, while increasing the overall availability of your network. CiscoWorks LMS supports more than 400 device types, including Cisco Catalyst 3750 v2 Series Switches, and it provides the following features:

- Network discovery, topology views, end-station tracking, and VLAN management
- Real-time network fault analysis, with easy-to-deploy device specific best-practice templates
- Hardware and software inventory management, centralized configuration tools, and syslog monitoring
- Network response-time and availability monitoring and tracking
- Real-time device, link, and port traffic management, analysis, and reporting

For further information about CiscoWorks LMS, go to http://www.cisco.com/go/lms.

Specifications

Table 2 summarizes the hardware specifications for the Cisco Catalyst 3750 v2 Series, Table 3 summarizes the power specifications, Table 4 summarizes standards support, and Table 5 summarizes safety and compliance information.

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Table 2. Cisco Catalyst 3750 v2 Series Switch Hardware

Description	Specification				
Performance	**Switching fabric**	32 Gbps			
	Flash memory	32 MB			
	Maximum number of VLANs	1000			
	VLAN IDs	4000			
	Switched virtual interfaces (SVIs)	Up to 1000			
	Maximum transmission unit (MTU)	Up to 9000 bytes			
	Jumbo frames	9016 bytes			
	Forwarding Rate				
	3750V2-48TS	13.1 (million packets per second (mpps)			
	3750V2-48PS	13.1 mpps			
	3750V2-24TS	6.5 mpps			
	3750V2-24PS	6.5 mpps			
	3750V2-24FS	6.5 mpps			
	MAC, routing, security, and QoS scalability numbers depend on the type of template used in the switch.				
		Default Template	**Access Template**	**VLAN Template**	**Routing Template**
	MAC address	6000	4000	12,000	3000
	IGMP groups and multicast routes	1000	1000	1000	1000
	Total unicast routes	8000	6000	0	11,000
	Directly connected hosts	6000	4000	0	3000
	Indirect routes	2000	2000	0	8000
	Security access control entries	1000	2000	1000	1000
	QoS access control entries	500	500	500	500
	PBR access control entries	0	500	0	500
Connectors and Cabling	• 10BASE-T ports: RJ-45 connectors, two-pair Category 3, 4, or 5 unshielded twisted-pair (UTP) cabling • 10BASE-T PoE ports: RJ-45 connectors, two-pair Category 3, 4, or 5 UTP cabling power pins 1, 2 (negative) and 3, 6 (positive) • 100BASE-TX ports: RJ-45 connectors, two-pair Category 5 UTP cabling • 100BASE-TX PoE ports: RJ-45 connectors, two-pair Category 5 UTP cabling, power on pins 1, 2 (negative) and 3, 6 (positive) • 1000BASE-T SFP-based ports: RJ-45 connectors, four-pair Category 5 UTP cabling • 1000BASE-SX, -LX/LH, -ZX, and CWDM SFP-based ports: LC fiber connectors (single and multimode fiber) • Cisco StackWise stacking ports: Copper-based Cisco StackWise cabling that is also compatible with the StackWise Plus technology in the Cisco Catalyst 3750-E Series Switches • Management console port: RJ-45-to-DB-9 cable for PC connections; for terminal connections, use RJ-45-to-DB-25 socket data-terminal-equipment (DTE) adaptor (can be ordered separately from Cisco; part number ACS-DSBUASYN=)				
Power Connectors	Customers can provide power to a switch by using either the internal power supply or the Cisco RPS 2300. The connectors are located at the back of the switch. Internal power supply connector The internal power supply is an autoranging unit. The internal power supply supports input voltages between 100 and 240 VAC. Use the supplied AC power cord to connect the AC power connector to an AC power outlet. Cisco RPS connector The connector offers connection for an optional Cisco RPS 2300 (model PWR-RPS2300) that uses AC input and supplies DC output to the switch.				

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Description	Specification				
Indicators	• Per-port status LEDs: Link integrity, disabled, activity, speed, full-duplex indications, PoE applied, PoE error, and PoE disabled indications • System-status LEDs: System, RPS, link status, link duplex, link speed, and PoE indications				
Dimensions (H x W x D)		**Inches**	**Centimeters**		
	3750V2-24TS	1.73 x 17.46x 11.62	4.4 x 44.3 x 29.5		
	3750V2-48TS	1.73 x 17.46x 11.62	4.4 x 44.3 x 29.5		
	3750V2-24PS	1.73 x 17.46x 11.62	4.4 x 44.3 x 29.5		
	3750V2-48PS	1.73 x 17.46x 11.62	4.4 x 44.3 x 29.5		
	3750V2-24FS	1.73 x 17.46x 11.62	4.4 x 44.3 x 29.5		
Weight		**Pounds**	**Kilograms**		
	3750V2-24TS	8.2	3.7		
	3750V2-48TS	9.2	4.2		
	3750V2-24PS	10	4.6		
	3750V2-48PS	11	5		
	3750V2-24FS	9.1	4.1		
Environmental Ranges		**Fahrenheit**	**Centigrade**		
	Operating temperature	32 to 113ºF	0 to 45ºC		
	Storage temperature	-13 to 158ºF	-25 to 70ºC		
		Feet	**Meters**		
	Operating altitude	Up to 9843 ft	Up to 3000 m		
	Storage altitude	Up to 15,000 ft	Up to 4573 m		
	Operating relative humidity	10 to 85% noncondensing			
	Storage relative humidity	10 to 85% noncondensing			
Acoustic Noise	ISO 7779 and ISO 9296: Bystander positions operating to an ambient temperature of 25°C				
		Sound Pressure		Sound Power	
		LpA (Typical)	**LpAD (Maximum)**	**LwA (Typical)**	**LwAD (Maximum)**
	3750V2-24TS	41 dB	44 dB	5.1 B	5.4 B
	3750V2-48TS	42 dB	45 dB	5.2 B	5.5 B
	3750V2-24PS	44 dB	47 dB	5.5 B	5.7 B
	3750V2-48PS	45 dB	48 dB	5.5 B	5.8 B
	3750V2-24FS	44 dB	47 dB	5.4 B	5.6 B
	Typical: Noise emission for a typical configuration and load at 25oC **Maximum:** Statistical maximum to account for variation in production				
Mean Time Between Failure (MTBF)	3750V2-24TS	351,247 hours			
	3750V2-48TS	284,588 hours			
	3750V2-24PS	261,586 hours			
	3750V2-48PS	198,078 hours			
	3750V2-24FS	349,610 hours			

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Table 3. Power Specifications for Cisco Catalyst 3750 v2 Series Switch

Description	Specification			
Power Supply Rated Maximum		**Switch Power Consumption**	**Total Output BTU**	
	3750V2-24TS	60W	205 BTU/hour	
	3750V2-48TS	130W	445 BTU/hour	
	3750V2-24PS	525W	1796 BTU/hour	
	3750V2-48PS	525W	1796 BTU/hour	
	3750V2-24FS	135W	461 BTU/hour	
Measured 100% Throughput Power Consumption		**Switch Power Consumption**	**Total Output BTU**	
	3750V2-24TS	39W	133 BTU/hour	
	3750V2-48TS	57W	195 BTU/hour	
	3750V2-24PS	54W	185 BTU/hour	
	3750V2-48PS	71W	243 BTU/hour	
	3750V2-24FS	55.2W	189 BTU/hour	
Measured 5% Throughput Power Consumption		**Switch Power Consumption**	**Total Output BTU**	
	3750V2-24TS	36W	123 BTU/hour	
	3750V2-48TS	52W	178 BTU/hour	
	3750V2-24PS	52W	178 BTU/hour	
	3750V2-48PS	67W	229 BTU/hour	
	3750V2-24FS	54.2W	185 BTU/hour	
Measured 100% Throughput Power Consumption (with Maximum PoE Loads)		**Switch Power Consumption**	**PoE Power**	**Total Output BTU**
	3750V2-24PS	444W	370W	251 BTU/hour
	3750V2-48PS	458W	370W	300 BTU/hour
Measured 5% Throughput Power Consumption (with 50% PoE Loads)		**Switch Power Consumption**	**PoE Power**	**Total Output BTU**
	3750V2-24PS	248W	185W	211 BTU/hour
	3750V2-48PS	263W	185W	254 BTU/hour
AC Input Voltage and Current		**Voltage (autoranging)**	**Current**	**Frequency**
	3750V2-24TS	100 to 240 VAC	0.7A to 0.5A	50 to 60 Hz
	3750V2-48TS	100 to 240 VAC	1.1A to 0.7A	50 to 60 Hz
	3750V2-24PS	100 to 240 VAC	5A to 2A	50 to 60 Hz
	3750V2-48PS	100 to 240 VAC	5A to 2A	50 to 60 Hz
	3750V2-24FS	100 to 240 VAC	2A to 1A	50 to 60 Hz
DC Output Voltages, Current, and Power Consumption from Cisco RPS 2300		**Switch**	**Switch Power**	**PoE**
	3750V2-24TS	+12V at 3A	36W	N/A-
	3750V2-48TS	+12V at 4A	48W	N/A-
	3750V2-24PS	+12V at 3A	36W	-48V at 7.8A
	3750V2-48PS	+12V at 4A	48W	-48V at 7.8A
	3750V2-24FS	+12V at 4A	48W	N/A-
PoE	• Maximum power supplied per port: 15.4W • Total power dedicated to PoE: 370W			

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Table 4. Management and Standards Support for Cisco Catalyst 3750 v2 Series Switch

Description	Specification	
Management	• BRIDGE-MIB • CISCO-CDP-MIB • CISCO-CLUSTER-MIB • CISCO-CONFIG-MAN-MIB • CISCO-ENTITY-FRU-CONTROL-MIB • CISCO-ENVMON-MIB • CISCO-FLASH-MIB • CISCO-FTP-CLIENT-MIB • CISCO-HSRP-MIB • CISCO-HSRP-EXT-MIB • CISCO-IGMP-FILTER-MIB • CISCO-IMAGE-MIB • CISCO-IP-STAT-MIB • CISCO-L2L3-INTERFACE-CONFIG-MIB • CISCO-MAC-NOTIFICATION-MIB • CISCO-MEMORY-POOL-MIB • CISCO-PAGP-MIB • CISCO-PING-MIB • CISCO-PROCESS-MIB • CISCO-RTTMON-MIB • CISCO-STACK-MIB • CISCO-STACKMAKER-MIB • CISCO-STACKWISE-MIB • CISCO-STP-EXTENSIONS-MIB • CISCO-SYSLOG-MIB • CISCO-TCP-MIB • CISCO-VLAN-IFTABLE-RELATIONSHIP-MIB • CISCO-VLAN-MEMBERSHIP-MIB	• CISCO-VTP-MIB • ENTITY-MIB • ETHERLIKE-MIB • IF-MIB • IGMP-MIB • IPMROUTE-MIB • OLD-CISCO-CHASSIS-MIB • OLD-CISCO-FLASH-MIB • OLD-CISCO-INTERFACES-MIB • OLD-CISCO-IP-MIB • OLD-CISCO-SYS-MIB • OLD-CISCO-TCP-MIB • OLD-CISCO-TS-MIB • OSPF-MIB (RFC 1253) • PIM-MIB • RFC1213-MIB • RFC1253-MIB • RMON-MIB • RMON2-MIB • SNMP-FRAMEWORK-MIB • SNMP-MPD-MIB • SNMP-NOTIFICATION-MIB • SNMP-TARGET-MIB • SNMPv2-MIB • TCP-MIB • UDP-MIB
Standards	• IEEE 802.1s • IEEE 802.1w • IEEE 802.1x • IEEE 802.3ad • IEEE 802.3af • IEEE 802.3x full duplex on 10BASE-T, 100BASE-TX, and 1000BASE-T ports • IEEE 802.1D Spanning Tree Protocol • IEEE 802.1p CoS Prioritization • IEEE 802.1Q VLAN • IEEE 802.3 10BASE-T specification • IEEE 802.3u 100BASE-TX specification • IEEE 802.3ab 1000BASE-T specification • IEEE 802.3z 1000BASE-X specification	• 1000BASE-X (SFP) • 1000BASE-SX • 1000BASE-LX/LH • 1000BASE-ZX • 1000BASE-CWDM SFP 1470 nm • 1000BASE-CWDM SFP 1490 nm • 1000BASE-CWDM SFP 1510 nm • 1000BASE-CWDM SFP 1530 nm • 1000BASE-CWDM SFP 1550 nm • 1000BASE-CWDM SFP 1570 nm • 1000BASE-CWDM SFP 1590 nm • 1000BASE-CWDM SFP 1610 nm • RMON I and II standards • SNMPv1, SNMPv2c, and SNMPv3

Table 5. Safety and Compliance

Description	Specification
Safety certifications	• UL 60950-1, First Edition • CUL to CAN/CSA 22.2 No. 60950-1, First Edition • TUV/GS to EN 60950-1, First Edition • CB to IEC 60950-1 with all country deviations • NOM (through partners and distributors) • CE Marking

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Description	Specification
Electromagnetic emissions certifications	• FCC Part 15 Class A • EN 55022 Class A (CISPR22) • EN 55024 (CISPR24) • AS/NZS CISPR22 Class A • CE • KCC • GOST • China EMC Certifications
Telco	Common Language Equipment Identifier (CLEI) code
Warranty	Cisco Limited Lifetime Warranty

Cisco Limited Lifetime Hardware Warranty Terms

The following are special terms applicable to your hardware warranty. Your formal warranty statement, including the warranty applicable to Cisco software, appears in the Cisco information packet that accompanies your Cisco product.

- Duration of hardware warranty: As long as the original customer owns the product.
- Replacement, repair or refund procedure for hardware: Cisco or its service center will use commercially reasonable efforts to ship a replacement part within 10 working days after receipt of the return materials authorization (RMA) request. Actual delivery times may vary depending on customer location.

Cisco reserves the right to refund the purchase price as its exclusive warranty remedy.

To receive an RMA number, please contact the party from whom you purchased the product. If you purchased the product directly from Cisco, contact your Cisco sales and service representative.

Complete the form below and keep for ready reference.

Product purchased from:	
Their telephone number:	
Product Model and Serial number:	
Maintenance Contract number:	

For further information on warranty terms, visit http://www.cisco.com/en/US/docs/general/warranty/English/LH2DEN__.html.

Safety Compliance and Product Approval Status

For further information on safety and compliance documentation, visit the Product Approval Status tool at http://tools.cisco.com/cse/prdapp/jsp/externalsearch.do?action=externalsearch&page=EXTERNAL_SEARCH.

Service and Support

Cisco is committed to reducing TCO. The company offers a portfolio of technical support services to help ensure that its products operate efficiently, remain highly available, and benefit from the most up-to-date system software. The services and support programs described in Table 6 are available as part of the Cisco Desktop Switching Services and Support solution and are available directly from Cisco and through resellers.

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Table 6. Cisco Services and Support Programs

Service and Support	Features	Benefits
Advanced Services		
• Cisco Total Implementation Solutions (TIS), available directly from Cisco • Cisco Packaged TIS, available through resellers • Cisco SMARTnet® and SMARTnet Onsite support, available directly from Cisco • Cisco Packaged SMARTnet support program, available through resellers	• Project management • Site survey, configuration, and deployment • Installation, text, and cutover • Training • Major moves, adds, and changes • Design review and product staging • Access to software updates 24 hours a day • Web access to technical repositories • Telephone support through the Cisco Technical Assistance Center (TAC) • Advance replacement of hardware parts	• Cisco Total Implementation Solutions (TIS), available direct from Cisco • Cisco Packaged TIS, available through resellers • Cisco SMARTnet® and SMARTnet Onsite support, available direct from Cisco • Cisco Packaged SMARTnet support program, available through resellers

Ordering Information

Table 7 provides ordering information for the Cisco Catalyst 3750 v2 Series Switches.

Table 7. Ordering Information for Cisco Catalyst 3750 v2 Series Switches

Part Numbers	Description
WS-C3750V2-24TS-S	• 24 Ethernet 10/100 ports and 2 SFP-based Gigabit Ethernet ports • 32-Gbps, wire rate backplane • 1RU fixed-configuration, multilayer switch • IPv6 • IP Base software feature set
WS-C3750V2-24TS-E	• 24 Ethernet 10/100 ports and 2 SFP-based Gigabit Ethernet ports • 32-Gbps, wire rate backplane • 1RU fixed-configuration, multilayer switch • IPv6 • IP Services software feature set
WS-C3750V2-48TS-S	• 48 Ethernet 10/100 ports and 4 SFP-based Gigabit Ethernet ports • 32-Gbps, wire rate backplane • 1RU fixed-configuration, multilayer switch • IPv6 • IP Base software feature set
WS-C3750V2-48TS-E	• 48 Ethernet 10/100 ports and 4 SFP-based Gigabit Ethernet ports • 32-Gbps, wire rate backplane • 1RU fixed-configuration, multilayer switch • IPv6 • IP Services software feature set
WS-C3750V2-24PS-S	• 24 Ethernet 10/100 ports and 2 SFP-based Gigabit Ethernet ports • 32-Gbps, wire rate backplane • 370W available for PoE, allowing 15.4W to all ports • 1RU fixed-configuration, multilayer switch • IPv6 • IP Base software feature set
WS-C3750V2-24PS-E	• 24 Ethernet 10/100 ports and 2 SFP-based Gigabit Ethernet ports • 32-Gbps, wire rate backplane • 370W available for PoE, allowing 15.4W to all ports • 1RU fixed-configuration, multilayer switch • IPv6 • IP Services software feature set

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Part Numbers	Description
WS-C3750V2-48PS-S	• 48 Ethernet 10/100 ports and 4 SFP-based Gigabit Ethernet ports • 32-Gbps, wire rate backplane • 370W available for PoE, allowing full 15.4W for up to 24 ports • 1RU fixed-configuration, multilayer switch • IPv6 • IP Base software feature set
WS-C3750V2-48PS-E	• 48 Ethernet 10/100 ports and 4 SFP-based Gigabit Ethernet ports • 32-Gbps, wire rate backplane • 370W available for PoE, allowing full 15.4W for up to 24 ports • 1RU fixed-configuration, multilayer switch • IPv6 • IP Services software feature set
WS-C3750V2-24FS-S	• 24 Ethernet 100FX SFP ports and 2 SFP Gigabit Ethernet ports • 32-Gbps, wire rate backplane • 1RU fixed-configuration, multilayer switch • IPv6 • IP Base software feature set
Cisco Catalyst 3750 v2 Series Cisco IOS Software upgrade options	
CD-3750-EMI=	• IP Services upgrade for the Cisco Catalyst 3750 v2 Series Switches • Advanced IP routing for IPv4 and IPv6
Cisco Redundant Power System 2300	
PWR-RPS2300	Cisco RPS 2300 with one connector cable
CAB-RPS2300-E=	Spare RPS 2300 cable for Cisco Catalyst 3560 v2, 3750 v2, 3560-E, 3750-E, and 2960 PoE Series Switches
C3K-PWR-750WAC=	Spare 750WAC power supply for the RPS 2300 and Cisco Catalyst 3560-E / 3750-E Series Switches
C3K-PWR-1150WAC=	Spare 1150WAC power supply for the RPS 2300 and Cisco Catalyst 3560-E / 3750-E Series Switches
Spare rack mount kits for the Cisco Catalyst 3750 v2 Series	
RCKMNT-1RU=	Spare rack-mount kit for the Cisco Catalyst 3560 and 3750 Series
RCKMNT-REC-1RU=	1RU recessed rack-mount kit for the Cisco Catalyst 3560 and 3750 Series
Stacking cables for the Cisco Catalyst 3750 v2 Series	
CAB-STACK-50CM=	Cisco StackWise 50-cm stacking cable
CAB-STACK-1M=	Cisco StackWise 1-m stacking cable
CAB-STACK-3M=	Cisco StackWise 3-m stacking cable
Spare power cords for the Cisco Catalyst 3750 v2 Series	
CAB-AC=	Standard power cord. 125V, 10A, 2.1 meters
CAB-16AWG-AC=	Standard power cord. 125V, 13A, 2.5 meters
CAB-ACE=	Europe. 250V, 10A, 2.5 meters
CAB-ACI=	Italy. 250V, 10A, 2.5 meters
CAB-ACU=	UK and Hong Kong. 250V, 10A, 2.5 meters
CAB-ACA=	Australia and China. 250V, 10A, 2.5 meters
CAB-ACS=	Switzerland. 250V, 10A, 2.5 meters
CAB-ACR=	Argentina. 250V, 10A, 2.5 meters
CAB-JPN=	Japan. 125V, 12A, 2.5 meters
CAB-IND-10A=	India. 250V, 10A, 2.5 meters
CAB-C13-C14-AC=	Power cord with C14 connector. 250V, 10A, 3.0 meters
SFP optic modules for the Cisco Catalyst 3750 v2 Series	
GLC-LH-SM=	1000BASE-LX/LH SFP transceiver module for MMF and SMF, 1300-nm wavelength
GLC-SX-MM=	1000BASE-SX SFP transceiver module for MMF, 850-nm wavelength
GLC-ZX-SM=	1000BASE-ZX SFP transceiver module for SMF, 1550-nm wavelength

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Part Numbers	Description
GLC-T=	1000BASE-T SFP transceiver module for Category 5 copper wire Not supported on the Cisco Catalyst 3560-8PC compact switch
GLC-BX-D=	1000BASE-BX10 SFP transceiver module for single strand SMF, 1490-nm TX / 1310-nm RX wavelength
GLC-BX-U=	1000BASE-BX10 SFP transceiver module for single strand SMF, 1310-nm TX / 1490-nm RX wavelength
GLC-GE-100FX=	• 100BASE-FX SFP transceiver module for Gigabit Ethernet ports, 1310 nm wavelength, 2 km over MMF • Not supported on the Cisco Catalyst 3560-8PC compact switch and Catalyst 3750V2-24FS switch access ports.
GLC-FE-100FX=	• 100BASE-FX SFP transceiver module for 100-Mb ports, 1310 nm wavelength, 2 km over MMF • Only supported on the Cisco Catalyst 3560-8PC compact switch and Catalyst 3750V2-24FS switch access ports
GLC-3750V2-FX12=	12 units of GLC-FE-100FX for 3750V2-24FS switch
GLC-3750V2-FX24=	24 units of GLC-FE-100FX for 3750V2-24FS switch
GLC-FE-100LX=	• 100BASE-FX SFP transceiver module for 100-Mb ports, 1310 nm wavelength, 10 km over SMF • Only supported on the Cisco Catalyst 3560-8PC compact switch and Catalyst 3750V2-24FS switch
GLC-FE-100BX-D=	• 100BASE-BX10-D SFP transceiver module for 100-Mb ports, 1550 nm TX/1310 nm RX wavelength, 10 km over single-strand SMF • Only supported on the Cisco Catalyst 3560-8PC compact switch and Catalyst 3750V2-24FS switch
GLC-FE-100BX-U=	• 100BASE-BX10-U SFP transceiver module for 100-Mb ports, 1310 nm TX/1550 nm RX wavelength, 10 km over single-strand SMF • Only supported on the Cisco Catalyst 3560-8PC compact switch and Catalyst 3750V2-24FS switch
CWDM-SFP-1470=	Cisco CWDM SFP 1470 nm; Gigabit Ethernet and 1G/2G FC (gray)
CWDM-SFP-1490=	Cisco CWDM SFP, 1490 nm; Gigabit Ethernet and 1G/2G FC (violet)
CWDM-SFP-1510=	Cisco CWDM SFP, 1510 nm; Gigabit Ethernet and 1G/2G FC (blue)
CWDM-SFP-1530=	Cisco CWDM SFP, 1530 nm; Gigabit Ethernet and 1G/2G FC (green)
CWDM-SFP-1550=	Cisco CWDM SFP, 1550 nm; Gigabit Ethernet and 1G/2G FC (yellow)
CWDM-SFP-1570=	Cisco CWDM SFP, 1570 nm; Gigabit Ethernet and 1G/2G FC (orange)
CWDM-SFP-1590=	Cisco CWDM SFP, 1590 nm; Gigabit Ethernet and 1G/2G FC (red)
CWDM-SFP-1610=	Cisco CWDM SFP, 1610 nm; Gigabit Ethernet and 1G/2G FC (brown)
DWDM-SFP-3033=	DWDM SFP 1530.33 nm SFP (100 GHz ITU grid)
DWDM-SFP-3112=	DWDM SFP 1531.12 nm SFP (100 GHz ITU grid)
DWDM-SFP-3190=	DWDM SFP 1531.90 nm SFP (100 GHz ITU grid)
DWDM-SFP-3268=	DWDM SFP 1532.68 nm SFP (100 GHz ITU grid)
DWDM-SFP-3425=	DWDM SFP 1534.25 nm SFP (100 GHz ITU grid)
DWDM-SFP-3504=	DWDM SFP 1535.04 nm SFP (100 GHz ITU grid)
DWDM-SFP-3582=	DWDM SFP 1535.82 nm SFP (100 GHz ITU grid)
DWDM-SFP-3661=	DWDM SFP 1536.61 nm SFP (100 GHz ITU grid)
DWDM-SFP-3819=	DWDM SFP 1538.19 nm SFP (100 GHz ITU grid)
DWDM-SFP-3898=	DWDM SFP 1538.98 nm SFP (100 GHz ITU grid)
DWDM-SFP-3977=	DWDM SFP 1539.77 nm SFP (100 GHz ITU grid)
DWDM-SFP-4056=	DWDM SFP 1540.56 nm SFP (100 GHz ITU grid)
DWDM-SFP-4214=	DWDM SFP 1542.14 nm SFP (100 GHz ITU grid)
DWDM-SFP-4294=	DWDM SFP 1542.94 nm SFP (100 GHz ITU grid)
DWDM-SFP-4373=	DWDM SFP 1543.73 nm SFP (100 GHz ITU grid)
DWDM-SFP-4453=	DWDM SFP 1544.53 nm SFP (100 GHz ITU grid)
CAB-SM-LCSC-1M	1m-fiber single-mode LC-to-SC connectors
CAB-SM-LCSC-5M	5m-fiber single-mode LC-to-SC connectors

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